

538,546

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 June 2004 (24.06.2004)

PCT

(10) International Publication Number
WO 2004/052392 A2

(51) International Patent Classification⁷: **A61K 39/002**,
48/00, C07K 14/82

(21) International Application Number:
PCT/GB2003/005403

(22) International Filing Date:
10 December 2003 (10.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0228900.7 11 December 2002 (11.12.2002) GB

(71) Applicant (for all designated States except US): **THE UNIVERSITY OF BIRMINGHAM** [GB/GB]; Edgbaston, Birmingham B15 2TT (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **YOUNG, Lawrence**,
Sterling [GB/GB]; CRUK Institute for Cancer Studies,

Birmingham B15 2TT (GB). **ADAMS, David, Harvey** [GB/GB]; Division of Medical Sciences, The Liver Unit, The Medical School, University of Birmingham, Birmingham B15 2TT (GB). **IRVINE, Alistair, Simpson** [GB/GB]; ML Laboratories PLC, Stephenson Building, Keele University Science Park, Keele, Staffordshire ST5 5SP (GB).

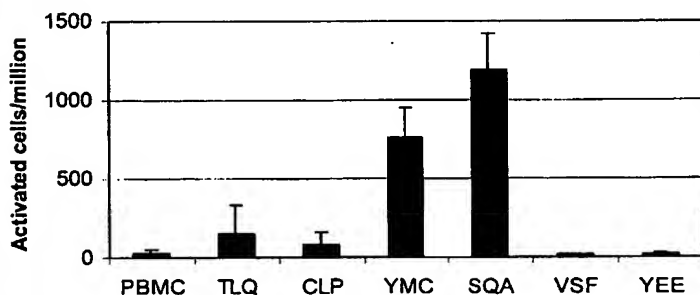
(74) Agent: **GODDARD, David, John**; Harrison Goddard Foote, Orlando House, 11c Compstall Road, Marple Bridge, Stockport SK6 5HH (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: **CANCER IMMUNOTHERAPY**

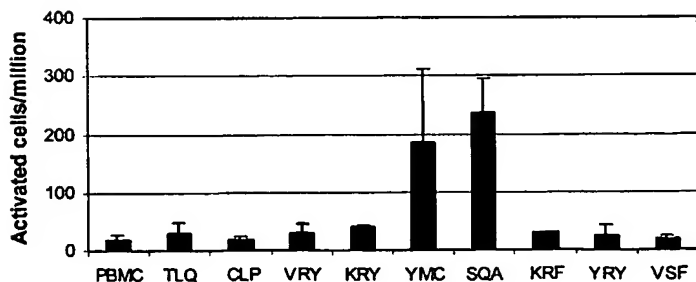
JW HCC CD4 Depleted HLA A2



A

(57) Abstract: The invention relates to the use of polycomb group proteins as a tumour-associated antigens. Polycomb group proteins are highly involved in body architecture development, haematopoiesis and cell cycle control. Aberrant expression of polycomb proteins has been linked with haematological malignancies, mainly lymphomas. This invention relates to the use of these polycomb group proteins as antigens for cancer immunotherapy. Immunological responses can be raised against these proteins and such responses are active against polycomb protein over-expressing tumour cells.

RT Normal CD4 Depleted HLA A2 B27



B

WO 2004/052392 A2



(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only